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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/773,147	01/31/2001	Arnaud Gesnot	PHFR000011	5941

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EXAMINER

THOMPSON, JAMES A

ART UNIT	PAPER NUMBER
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2624

DATE MAILED: 08/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/773,147

Applicant(s)

GESNOT, ARNAUD

Examiner

James A Thompson

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 04 September 2001 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. The NPL document listed on said information disclosure statement as item "AL" is not in the application and has therefore not been considered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 recites the limitation "said addition step" in lines 5-6. There is insufficient antecedent basis for this limitation in the claim. Claim 1 refers to a "correction step for adding", but does not refer to said correction step as an "addition step".

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Moronaga (US Patent 5,229,864).

Regarding claim 1: Moronaga discloses a method of processing an input signal (column 3, lines 36-37 of Moronaga), said input signal comprising said blocks (column 3, lines 37-39 of Moronaga). Said blocks comprise pixels of digital picture data (column 3, lines 36-39 of Moronaga), which, by the definition of digital pixels, must be n-bit binary input samples, with n being an integer.

Said method comprises a low pass filtering step applied to the input signal (figure 12(300) and column 11, lines 21-23 of Moronaga), which results in a filtered signal comprising filtered samples (column 11, lines 23-27 of Moronaga).

Said method further comprises a determination step (figure 12(18) of Moronaga) for determining a correction area around block boundaries (column 4, lines 9-16 of Moronaga). The combining section (figure 12(18) of Moronaga) combines 8x8 pixel blocks (column 4, lines 9-10 of Moronaga), thus defining a correction area, for correcting distortion between nearby blocks (column 4, lines 11-16 of Moronaga).

Said method further comprises a correction step for adding a random binary number (figure 12(302) of Moronaga) comprising at least one bit to the filtered samples

belonging to the correction area, which results in an output signal (column 12, lines 50-53 of Moronaga). Said random noise inherently comprises at least one bit in order to exist as an actual digital number.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moronaga (US Patent 5,229,864) in view of Jung (US Patent 5,732,159).

Regarding claim 2: Moronaga discloses applying a filtering step (figure 12(300) of Moronaga) to the signal input into said filtering step block (column 11, lines 21-23 of Moronaga) around block boundaries (column 11, lines 25-29 of Moronaga); and adding a random binary number to the filtered samples that are input into the random noise addition block (column 11, lines 30-35 of Moronaga), which results in an output signal (column 11, lines 37-39 and lines 44-45 of Moronaga).

Moronaga does not disclose expressly multiplying the input samples by a power of 2, which results in a modified signal comprising modified samples of m-bit binary numbers; a computing sub-step of mask values equal to the m-n least significant bits of the filtered samples; dividing the filtered samples by said power of 2; and specifically

executing said step of adding a random binary number after said filtered samples have been divided by said power of 2 and when the mask values are different from zero.

Jung discloses multiplying the input samples by a power of 2 (figure 2; and column 2, equation 1 and lines 56-61 of Jung). Since the filtered binary number represents fractional values, said fractions being $\frac{1}{4}$, $\frac{1}{2}$ or $\frac{3}{4}$ (figure 2; figure 3B and column 2, lines 56-61 of Jung), two more bits are needed to represent said numbers, said bits being the two least significant bits. As a pure binary number, and thus representing a binary integer, the modified values are multiplied by four when two extra bits are added, and then a value of 00 (binary), 01(binary), 10 (binary) or 11 (binary) is added or subtracted (figures 3A-3B and column 2, lines 58-61 of Jung). Therefore, said step of multiplying results in a modified signal comprising modified samples of m-bit numbers. For the purpose of greater clarity, an example is given below. Said example is taken from the alterations made to the input signal shown in figure 3A, which are reflected in the output shown in figure 3B, particularly the column above the "1" in "14" in both of said figures. Said column from figure 3A-3B displays a value that is altered from 126 to 125.75.

126 (decimal) written as a binary number is 1111110 (binary). 125.75 written as a binary number is 1111101.11 (binary). However, since there are no decimal points in a real computer binary representation, the pure binary number used to represent 125.75 is 111110111 (binary), which translates to an equivalent decimal value of 503. 126 (decimal) written as a binary number using the same number of representative bits is written as 1111110.00 (binary), which taken as a pure binary number is 111111000

(binary), which translates to 504 (decimal). The binary representation of 126.00 (decimal) as a pure binary number using the same number of bits as 125.75 (decimal), is a binary number four times the value of the original, unaltered representation of 126 (decimal).

The difference signal (figure 3C and column 2, lines 62-67 of Jung), which corresponds to the least significant (m-n) bits, denotes the region of discontinuity between image blocks (column 3, line 67 to column 4, line 4 of Jung), and thus the area that needs to be corrected.

Moronaga and Jung are combinable because they are from the same field of endeavor, namely the mitigation of blocking effects in image signals. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the filtering method and increased number of representative bits to determine the region of discontinuity between image blocks, as taught by Jung. Said determination would then be used in correction area determination performed by Moronaga. Said random binary numbers would then be added to the resultant pixel values. Since the output of Moronaga is limited to a range of 0 to 255 to represent the image (column 11, lines 40-44 of Moronaga), and thus eight bits, the random number would therefore be added to an 8-bit number (column 11, lines 41-42 of Moronaga). Therefore, with an output of eight bits, the two least significant bits representing the fraction of the pixel value would be dropped, thus dividing the pure binary number by a factor of four using the same logic discussed above. The motivation for doing so would have been to reduce blocking

effects (column 1, lines 35-37 of Jung). Therefore, it would have been obvious to combine Jung with Moronaga to obtain the invention as specified in claim 2.

8. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moronaga (US Patent 5,229,864) in view of Nakaya (US Patent 6,295,376 B1).

Regarding claim 3: The arguments regarding claim 1 are incorporated herein. Moronaga discloses a computer program product (figure 12 of Moronaga) that comprises a set of instructions that, when loaded, carries out the method of claim 1 (column 11, lines 10-11 and lines 16-20 of Moronaga). The embodiment of the invention shown in figure 12 of Moronaga is used to correct distortion in digital pixel data (column 11, lines 16-20 of Moronaga). Some form of computer program product embodied in some form of computer memory is required to process said digital pixel data, each of the sections of the embodiment in figure 12 of Moronaga comprising a section of the computer program product.

Moronaga does not disclose expressly that said computer program product is for a television receiver and is loaded into a television receiver.

Nakaya discloses installing an image processing device into a television receiver (column 12, lines 15-17 of Nakaya).

Moronaga and Nakaya are combinable because they are from the same field of endeavor, namely video image data processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to install the computer program product of Moronaga into a television receiver and use said computer program product

for said television receiver, as taught by Nakaya. The motivation for doing so would have been to have the computer programming product in a device that is capable of receiving and displaying digital image data (column 12, lines 27-31 of Nakaya). Therefore, it would have been obvious to combine Nakaya with Moronaga to obtain the invention as specified in claim 3.

Regarding claim 4: The arguments regarding claim 1 are incorporated herein. Moronaga discloses a computer program product (figure 12 of Moronaga) that comprises a set of instructions that, when loaded, carries out the method of claim 1 (column 11, lines 10-11 and lines 16-20 of Moronaga). The embodiment of the invention shown in figure 12 of Moronaga is used to correct distortion in digital pixel data (column 11, lines 16-20 of Moronaga). Some form of computer program product embodied in some form of computer memory is required to process said digital pixel data, each of the sections of the embodiment in figure 12 of Moronaga comprising a section of the computer program product.

Moronaga does not disclose expressly that said computer program product is for a set-top-box and is loaded into a set-top-box.

Nakaya discloses installing an image processing device into a set top box (column 12, lines 21-23 of Nakaya).

Moronaga and Nakaya are combinable because they are from the same field of endeavor, namely video image data processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to install the computer program product of Moronaga into a set top box and use said computer program product for said

set top box, as taught by Nakaya. The motivation for doing so would have been to have the computer programming product in a device that is capable of receiving and displaying digital image data (column 12, lines 27-31 of Nakaya). Therefore, it would have been obvious to combine Nakaya with Moronaga to obtain the invention as specified in claim 4.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A Thompson whose telephone number is 703-305-6329. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K Moore can be reached on 703-308-7452. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James A. Thompson
Examiner
Art Unit 2624

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JAT
August 19, 2004



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~~TOMMY~~ LEE
PRIMARY EXAMINER